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# STATE OF MONTANA
# BULLETIN
OF THE
# Department of Public Health

Vol. 6 January 15, 1914 No. 10

## MONTANA STATE BOARD OF HEALTH

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ALLAN TUFFORD,
Consulting Architect.
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Consulting Sanitary Engineer.

HELENA, MONTANA.

Published Monthly at Helena, by the State Board of Health.

"The science of disease prevention, if properly applied, can add fifteen years to the present average length of human life."—Prof. Irving Fisher, Yale.

This Bulletin will be mailed monthly to any person in Montana upon request mailed to the Secretary of the State Board of Health at Helena.

ALLIED PRINTING TRADES UNION LABEL COUNCIL HELENA

We quote below sections of the general school laws pertaining to the building of school houses:

Section 1601. No school house shall hereafter be erected, repaired, or enlarged in any school district of the State at an expense which shall exceed Five Hundred ($500.00) Dollars, until the plans and specifications thereof shall have been submitted to the State Board of Health, and its approval endorsed thereon; Provided, that districts of the second and third class shall also have the approval of the superintendent of public instruction. Such plans and specifications shall show in detail the ventilation, the heating and lighting of such building.

Section 1602. The Board of Health shall not approve plans for the erection of any school building or addition thereto or remodeling thereof, unless the same shall provide (a) at least fifteen square feet of floor space and two hundred cubic feet of air space for each pupil to be accommodated in each study or recitation room therein; (b) at least thirty cubic feet of pure air per minute per pupil shall be furnished by a satisfactory ventilating system, which should also provide means for exhausting the foul or vitiating air from the room.

The light shall come from the left or from the left and rear of each school room, and the window space shall be not less than one-seventh of the floor space of each room.

Section 1603. The county treasurer shall not make any payments on any contract arising under the provisions of this chapter until the contractor furnishes a certified statement signed by the State Board of Health that the plans and specifications of the school building to be erected or remodeled, have been fully approved by the State Board of Health.

Section 1604. It shall be the duty of the State Board of Health to furnish to all districts of the third class suggestive plans for school buildings to be erected in conformity with the above rules.

Section 1605. No one and two room school houses shall be erected without a vestibule of reasonable size.

It would be quite impossible to furnish building plans to suit the exact needs of every district requiring plans. We have, however, two sets of plans which we have been furnishing to rural districts, one set of plans capable of accommodating from ten to twelve pupils and the other capable of accommodating from twenty-four to thirty pupils. As these plans are merely suggestive, they can easily be made larger or smaller by the contractor to meet the needs of the particular district for which they are intended. The law, however, with reference to light, air and floor space must be complied with, and if changes are made, these changes must be submitted to this department for approval before building operations are commenced. From May 1st up to December 31st, one hundred nineteen of these plans have been furnished to rural districts. Some rural districts preferred to build their school houses from plans which they furnished this department, and of these thirty-five were approved. During this time, we have also examined, approved and filed in this office forty-five plans for districts of the first class, making one hundred ninety-nine plans that have been approved by this department from May 1st to December 31st, 1913.

Last winter a complaint was made to this department from a party at Poplar to the effect that there was quite a number of cases of trachoma in the Poplar schools. At that time we had no law whereby we could act on this complaint, but at the last session of the legislature the State Board of Health was given authority to place in the list of communicable diseases any disease which they deemed necessary.

At a meeting of the Board of Health in July trachoma was placed in the list of communicable diseases. When the schools opened in September an investigation was made and it was found that there was quite a number of cases of trachoma in the schools.

On account of the fact that many of the children attending this school were breed children and consequently wards of the government, the Department of the Interior was asked to send a physician skilled in the disease of trachoma to make an examination of the children attending this school for the purpose of weeding out this disease.

Dr. C. H. Dewey, assistant physician of the United States Indian Service, was detailed for this work. Dr. J. H. Drake, county health officer of Sheridan county, was asked to represent the State Board of Health. These physicians made a very careful examination of the school children with the following result:

| | | Per Cent |
|---|---|---|
| Normal | 56 | 52.3 |
| Trachoma | 16 | 15.0 |
| Suspicious | 12 | 11.2 |
| Folic Conj. | 19 | 11.7 |
| Acute Conj. | 4 | 3.8 |
| Total Examined | 107 | 100.0 |

Dr. J. H. Drake then served notice upon the school board to exclude from attending the public schools all children who were suffering from trachoma and those who were classed as suspicious, and not to allow them to return to school until they could secure a certificate from a physician showing them to be free from trachoma and other communicable diseases.

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The law requires that all parties conducting confectionery and bake shops, dairies, hotel, restaurants, lunch counters, meat markets and slaughter houses within the State, obtain a license from the Department of Public Health. During the year ending December 31st, 1913, there were issued the following licenses:

| | |
|---|---|
| Dairies | 3,985 |
| Confectionery and Bake Shops | 332 |
| Hotel, Restaurants and Lunch Counters | 1,991 |
| Meat Markets and Slaughter Houses | 814 |
| Total | 7,122 |

As the law now stands this department is compelled to issue a license to any person applying for it, irrespective of the sanitary condition of their place of business. We believe that the law should be so modified that the person applying for a license be required to furnish evidence that their place is in a sanitary condition. No license should be issued for a place that does not meet the requirements of the law relative to cleanliness.

We have issued licenses to parties when we knew absolutely that they were violating all of the laws of sanitation in conducting their business, and have had to take immediate steps to revoke such license.

It would aid us greatly in our work if we were not compelled to issue the license in the first place, until the parties cleaned up.

One day Tommy came in with his face dirty and a black eye. "Why, Tommy," said his mother, "I thought I always told you to count a hundred before you fought."

"Wel, Mamma, I did," said the tearful boy, "but I never will again. Look what the other boy did while I was counting." —Selected.

## TOO MUCH OF A GOOD THING.

Little Johnnie, who had been praying for some months for God to send him a baby brother, finally became discouraged.

"I don't believe God has any more little boys to send," he told his mother, "and I'm going to stop praying."

Early one morning not long after this he was taken into his mother's room to see twin boys, who had arrived in the night. Johnnie regarded them thoughtfully for some minutes. "Golly," he remarked, "it's a good thing I stopped praying when I did."

## SIDETRACKED.

A little fellow, who had told a falsehood and had been found out, was being talked to seriously by his teacher, who directed her efforts to making the youngster feel ashamed of what he had done. Judging by the interested look on his face, she thought she was making the desired impression, when the youth eagerly exclaimed, "I say, teacher, it's your lower jaw that moves, isn't it."

"We men of earth have here the stuff
Of Paradise,—we have enough!
We need no other thing to build
The stairs into the unfulfilled—
No other ivory for the doors—
No other marble for the floors—
No other cedar for the beam
And dome of man's immortal dream.

Here on the paths of every day—
Here on the common human way—
Is all the busy gods would take
To build to heaven, to mould and make
New Edens. Ours the stuff sublime
To build Eternity in Time!
—Edwin Markham.

# COMMUNICABLE DISEASES REPORTED TO THE STATE BOARD OF HEALTH FOR THE MONTH OF DECEMBER—1913.

**Smallpox**—Cascade (Excl. of Gt. Falls), 1; Great Falls, 8; Carbon, 7; Custer, 1; Hill, 11; Meagher, 11; Missoula City, 4; Musselshell, 1; Ravalli, 9; Rosebud, 2; Sanders, 1; Silver Bow (Excl. of Butte), 3; Butte, 13; Teton, 1; Billings, 5. Total, 78; total last month, 65.

**Diphtheria**—Custer, 1; Flathead (Excl. of Kalispell), 1; Hill, 2; Missoula City, 2; Sheridan, 2; Silver Bow (Excl. of Butte), 1; Butte, 3; Valley, 1. Total, 13; total last month, 16.

**Scarlet Fever**—Beaverhead, 1; Cascade (Excl. of Gt. Falls), 2; Great Falls, 22; Carbon, 8; Custer, 6; Chouteau, 3; Dawson, 1; Hill, 5; Lewis and Clark (Excl. of Helena), 1; Helena, 1; Missoula City, 1; Powell, 3; Ravalli, 4; Stillwater, 1; Silver Bow (Excl. of Butte), 7; Butte, 3; Yellowstone (Excl. of Billings), 2; Billings, 5. Total, 76; total last month, 83.

**Typhoid Fever**—Beaverhead, 1; Blaine, 8; Cascade (Excl. of Gt. Falls), 2; Great Falls, 1; Carbon, 1; Custer, 1; Dawson, 3; Fergus, 1; Flathead (Excl. of Kalispell), 2; Kalispell, 2; Hill, 3; Helena, 1; Missoula City, 2; Sheridan, 4; Stillwater, 2; Butte, 1; Yellowstone (Excl. of Billings), 1; Billings, 1. Total, 37; total last month, 43.

**Measles**—Cascade (Excl. of Gt. Falls), 13; Great Falls, 5; Carbon, 82; Custer, 9; Fergus, 15; Bozeman, 1; Hill, 4; Helena, 5; Meagher, 3; Madison, 2; Musselshell, 2; Powell, 1; Stillwater, 14; Butte, 1; Teton, 1; Yellowstone (Excl. of Billings), 15; Billings, 131. Total, 304; total last month, 89.

**Whooping Cough**—Sheridan, 1; Total, 1; Total last month, 13.

**Tuberculosis**—Hill, 1; Missoula City, 2; Livingston, 1; Sheridan, 1; Butte, 1. Total, 6; total last month, 16.

**Trachoma**—Sheridan, 17. Total, 17; total last month, 0.

## DEATHS (EXCLUSIVE OF STILLBIRTHS*) REPORTED TO THE STATE BOARD OF HEALTH FOR THE MONTH OF DECEMBER, 1913, ARRANGED ACCORDING TO COUNTIES AND PRINCIPAL CITIES.

| | Spotted Fever | Small Pox | Tuberculosis | Diphtheria | Scarlet Fever | Measles | Typhoid Fever | Meningitis | Whooping Cough | Pneumonia | Nephritis | Organic Heart Disease | Malignant Tumors | Acute Intestinal Diseases | Violence | Suicide | Alcholism | All Other Causes | Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Beaverhead | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | 1 | .. | .. | 4 | 7 |
| Broadwater | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | 2 |
| Carbon | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 4 | .. | .. | 2 | .. | .. | 4 | 11 |
| Cascade (Excl. of) | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | 2 | .. | .. | 1 | .. | .. | 1 | 6 |
| Great Falls | .. | .. | 1 | .. | 1 | 2 | 1 | .. | .. | 5 | 1 | 1 | 1 | .. | 5 | 2 | .. | 5 | 25 |
| Chouteau | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | 1 | 1 | 2 | .. | 2 | 2 | 10 |
| Custer | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 2 | 1 | 1 | .. | .. | 2 | 4 | 11 |
| Dawson | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | 1 | .. | 1 | .. | .. | 9 | 13 |
| Deer Lodge (Excl. of) | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | 2 | .. | .. | .. | .. | .. | 9 | 13 |
| Anaconda | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 2 | 2 | 1 | 1 | 1 | 2 | 2 | 2 | 14 |
| Fergus | .. | .. | .. | .. | .. | .. | 1 | .. | .. | 1 | 1 | .. | .. | .. | 1 | .. | .. | 7 | 11 |
| Flathead (Excl. of) | .. | .. | 1 | .. | .. | .. | 1 | 1 | .. | 1 | .. | .. | .. | .. | 2 | .. | .. | 2 | 8 |
| Kalispell | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | 1 | 2 | .. | .. | 1 | 1 | 7 |
| Gallatin (Excl. of) | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | 2 | .. | .. | .. | .. | .. | 3 | 7 |
| Bozeman | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | 4 | 6 |
| Granite | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. | 2 | 4 |
| Jefferson | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | 2 |
| Lewis and Clark (Excl. of) | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | 2 | 1 | .. | 1 | .. | .. | 1 | 7 |
| Helena | .. | .. | .. | .. | .. | .. | 1 | .. | .. | 1 | 1 | 1 | 1 | .. | 2 | .. | .. | 4 | 11 |
| Lincoln | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | .. | 1 | .. | 3 | 6 |
| Madison | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | 2 | 5 |
| Meagher | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. | 1 | .. | .. | ... | 4 |
| Missoula (Excl. of) | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 4 | .. | 1 | 1 | .. | 2 | .. | .. | 2 | 11 |
| Missoula City | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 2 | .. | 2 | 2 | .. | .. | 1 | .. | 4 | 12 |
| Musselshell | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | 1 | .. | .. | .. | 1 | 4 |
| Park (Excl. of) | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | 4 | 8 |
| Livingston | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 4 | 7 |
| Powell | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 2 | 3 |
| Ravalli | .. | .. | 2 | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | 2 | .. | .. | 1 | 7 |
| Rosebud | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | ... | 1 |
| Sanders | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | 1 | .. | .. | 3 | .. | .. | 1 | 7 |
| Silver Bow (Excl. of) | .. | .. | 7 | .. | .. | .. | .. | .. | .. | 2 | 1 | 1 | 3 | 2 | 3 | .. | .. | 3 | 22 |
| Butte | .. | .. | 7 | .. | .. | .. | 1 | .. | 2 | 16 | 3 | 11 | 3 | 1 | 7 | 1 | 1 | 14 | 67 |
| Sweet Grass | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | 2 |
| Teton | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | 2 | 2 | .. | 1 | ... | 8 |
| Valley | .. | .. | .. | 2 | .. | .. | .. | 1 | .. | 1 | 1 | 1 | .. | .. | .. | .. | .. | 2 | 8 |
| Yellowstone (Excl. of) | .. | .. | 1 | .. | .. | 1 | .. | .. | .. | 1 | 1 | .. | .. | .. | 1 | .. | .. | 3 | 8 |
| Billings | .. | .. | 2 | .. | .. | 1 | .. | .. | .. | 2 | .. | 3 | 1 | 1 | .. | .. | .. | 3 | 13 |
| Blaine | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .. | 1 | .. | .. | 3 | 6 |
| Big Horn | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | ... | ... |
| Hill | .. | .. | .. | .. | .. | .. | 1 | .. | .. | 1 | .. | 1 | 1 | .. | .. | .. | 1 | 1 | 6 |
| Sheridan | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | .. | 3 | 6 |
| Stillwater | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | 1 | .. | .. | .. | 1 | .. | ... | 4 |
| TOTALS | .. | 1 | 29 | 2 | 1 | 5 | 11 | 5 | 3 | 54 | 22 | 45 | 21 | 13 | 45 | 9 | 11 | 123 | 400 |

*Stillbirths, 33.

| | |
|---|---|
| Estimated population | 420,000 |
| Monthly death rate per 1,000 population | .952 |
| Annual death rate per 1,000 population | 11.43 |

## BIRTHS (EXCL. OF STILLBIRTHS) REPORTED TO THE STATE BOARD OF HEALTH DURING THE MONTH OF DECEMBER, 1913, AND COMPARATIVE BIRTH AND DEATH RECORD IN THE STATE.

| | Males | Females | Totals | Deaths | Excess of Births | Excess of Deaths |
|---|---|---|---|---|---|---|
| Beaverhead | 7 | 6 | 13 | 7 | 6 | .. |
| Broadwater | 6 | 2 | 8 | 2 | 6 | .. |
| Carbon | 17 | 5 | 22 | 11 | 11 | .. |
| Cascade (Excl. of) | 7 | 11 | 18 | 6 | 12 | .. |
| Great Falls | 30 | 36 | 66 | 25 | 41 | .. |
| Chouteau | 3 | 4 | 7 | 10 | .... | 3 |
| Custer | 16 | 14 | 30 | 11 | 19 | .. |
| Dawson | 14 | 13 | 27 | 13 | 14 | .. |
| Deer Lodge (Excl. of) | .... | .... | .... | 13 | .... | 13 |
| Anaconda | 10 | 12 | 22 | 14 | 8 | .. |
| Fergus | 16 | 8 | 24 | 11 | 13 | .. |
| Flathead (Excl. of) | 6 | 10 | 16 | 8 | 8 | .. |
| Kalispell | 4 | 10 | 14 | 7 | 7 | .. |
| Gallatin (Excl. of) | 10 | 9 | 19 | 7 | 12 | .. |
| Bozeman | 6 | 8 | 14 | 6 | 8 | .. |
| Granite | 6 | 2 | 8 | 4 | 4 | .. |
| Jefferson | 2 | 4 | 4 | 2 | 6 | .. |
| Lewis and Clark (Excl. of) | 7 | 3 | 10 | 7 | 3 | .. |
| Helena | 13 | 13 | 26 | 11 | 15 | |
| Lincoln | 9 | 3 | 12 | 6 | 6 | .. |
| Madison | 9 | 7 | 16 | 5 | 11 | .. |
| Meagher | 6 | 1 | 7 | 4 | 3 | .. |
| Missoula (Excl. of) | 4 | 6 | 10 | 11 | .... | 1 |
| Missoula City | 6 | 10 | 16 | 12 | 4 | .. |
| Musselshell | 14 | 12 | 26 | 4 | 22 | .. |
| Park (Excl. of) | 10 | 3 | 13 | 8 | 5 | .. |
| Livingston | 8 | 4 | 12 | 7 | 5 | .. |
| Powell | 4 | 3 | 7 | 3 | 4 | .. |
| Ravalli | 9 | 8 | 17 | 7 | 10 | .. |
| Rosebud | 5 | 5 | 10 | 1 | 9 | .. |
| Sanders | 1 | 1 | 2 | 7 | .... | 5 |
| Silver Bow (Excl. of) | 13 | 20 | 33 | 22 | 11 | .. |
| Butte | 38 | 34 | 72 | 67 | 5 | .. |
| Sweet Grass | 1 | 2 | 3 | 2 | 1 | .. |
| Teton | 6 | 10 | 16 | 8 | 8 | .. |
| Valley | 5 | 2 | 7 | 8 | .... | 1 |
| Yellowstone (Excl. of) | 12 | 8 | 20 | 8 | 12 | .. |
| Billings | 16 | 21 | 37 | 13 | 24 | .. |
| Blaine | 9 | 9 | 18 | 6 | 12 | .. |
| Big Horn | .... | 1 | 1 | .... | 1 | .. |
| Hill | 13 | 15 | 28 | 6 | 22 | .. |
| Sheridan | 9 | 9 | 18 | 6 | 12 | .. |
| Stillwater | 7 | 8 | 15 | 4 | 11 | .. |
| TOTALS | 394 | 372 | 766 | 400 | 389 | 23 |

## BACTERIOLOGICAL EXAMINATIONS MADE DURING THE MONTH OF DECEMBER—1913.

### BY E. STARZ, BACTERIOLOGIST.

December 1st, 1913:
  Dr. B. A. Place, Great Falls, Montana.
    Blood for Widal Reaction—Positive.
December 2d, 1913:
  Dr. H. L. Kochler, Circle, Montana.
    Blood for Widal Reaction—Positive.
December 3d, 1913:
  Dr. R. Horsky, Helena, Montana.
    Sputum for Tuberc. Bac.—Negative.
  Dr. E. M. Porter, Fort Benton, Montana.
    Blood for Widal Reaction—Negative.
December 4th, 1913:
  Dr. Mott Arnold, Billings, Montana.
    Pus for Gonococci—Positive.
  Dr. H. G. Harris, Poplar, Montana.
    Sputum for Bac. Tub.—Negative.
  Dr. Hugh McMillan, Dillon, Montana.
    Blood for Widal Reaction—Positive.
December 5th, 1913:
  Dr. R. H. Beach, Glendive, Montana.
    Blood for Widal Reaction—Positive.
December 8th, 1913:
  Dr. Dunn, Lewistown, Montana.
    Blood for Widal—Positive.
  Dr. McCabe, Helena, Montana.
    Blood for Widal—Positive.
December 9th, 1913:
Dr. R. C. Holgate, Manhattan, Montana.
    Sputum forTub. Bac.—Negative.
T. R. Mathews, Butte, Montana.
    Sputum for T. B.—Negative.
December 10th, 1913:
  Dr. Poindexter, Dillon, Montana.
    Blood for Widal Reaction—Positive.
  Dr. Th. Morrow, Medicine Lake, Montana.
    Pus for Actinomyces—Positive.

December 11th, 1913:
  Dr. McCabe, Helena, Montana.
    Blood for Widal Reaction—Positive.
December 12th, 1913:
  Dr. E. M. Porter, Fort Benton, Montana.
    Blood for Widal Reaction—Positive.
Dr. Consler, Glendive, Montana.
    Swabings for Bac. Diphtheriae—Negative.
  Dr. B. A. Place, Great Falls, Montana.
    Blood for Widal Reaction—Positive.
December 15th, 1913:
  Dr. Dunn, Lewistown, Montana.
    Blood for Widal Reaction—Negative.
December 16th, 1913:
  Dr. A. M. McCauley, Great Falls, Montana.
    Sputum for Bac. Tub.—Negative.
  Dr. Danskin, Glendive, Montana.
    Two specimen of Blood for Widal Reaction—Both, Negative.
December 17th, 1913:
  Dr. A. Husser, Hingham, Montana.
    Blood for Widal Reaction—Negative.
  Dr. Balsam, Billings, Montana.
    Two Cultures for Bac. Diphtheriae—Both, Negative.
December 20, 1913:
  Dr. Mott Arnold, Billings, Montana.
    Blood for Widal Reaction—Positive.
  Dr. Bogardus, Eureka, Montana.
    Blood for Widal Reaction—Positive.
  Dr. Wm. A. Walters, Billings, Montana.
    Slide for Bac. Diphtheriae—Negative.
  Dr. McCann, Salesville, Montana.
    Blood for Widal Reaction—Negative.
December 22d, 1913:
  Dr. L. F. Lubeley, Ryegate, Montana.
    Two samples of Sputum for Tub. Bac—Both, Negative.
  Dr. Ritchey, Townsend, Montana.
    Culture for Bac. Diphtheriae—Negative.
December 23d, 1913:
  Dr. W. P. Smith, Columbus, Montana.
    Blood for Widal Reaction—Positive.

December 24th, 1913:
  Dr. McCabe, Helena, Montana.
    Blood for Widal Reaction—Positive.
  Dr. Horsky, Helena, Montana.
    Blood for Widal Reaction—Negative.
  Dr. R. A. Morrill, Sidney, Montana.
    Sputum for Bac. Tuberc.—Negative.
  Dr. Peck, Helena, Montana.
    Swabings for Diphtheriae Bac.—Negative.
  Dr. F. O. Vicars, Livingston, Montana.
    Sputum for Tub. Bac.—Positive.
December 26th, 1913:
  Dr. Johnston, Helena, Montana.
    Blood for Widal—Positive.
December 27th, 1913:
  Dr. Johnston, Helena, Montana.
    Blood for Widal Reaction—Positive.
December 29th, 1913:
  Dr. E. M. Porter, Fort Benton, Montana.
    Blood for Widal Reaction—Positive.
Dr. Johnston, Helena, Montana.
    Blood for Widal—Positive.
  Dr. M. P. Smith, Columbus, Montana.
    Blood for Widal Reaction—Positive.
  Dr. H. Clark, Billings, Montana.
    Sputum for Tub. Bac.—Negative.
  Dr. L. Fligman, Helena, Montana.
    Sputum for Tub. Bac.—Negative.
December 30, 1913:
  Dr. R. Horsky, Helena, Montana.
    Culture for Diphtheriae—Negative.

## DIVISION OF FOODS AND DRUGS.

Dr. W. F. Cogswell, Secretary State Board of Health,
Food and Drug Commissioner.
F. J. O'Donnell, Inspector.

### LABORATORY STAFF.

W. M. Cobleigh, Chemist.
D. L. Weatherhead, Analyst.
D. B. Swingle, Bacteriologist.
Carl Gottschalck, Assistant Analyst.
Nina Armstrong, Clerk and Stenographer.

## LABORATORY REPORT.

Samples reported during November and December.

| CLASSIFICATION. | No. Legal | No. Illegal | Unofficial | Total |
|---|---|---|---|---|
| Milk (Dairy Commission | 6 | 11 | .. | 17 |
| Cream (Dairy Commission) | 2 | .. | .. | 2 |
| Ice Cream (Dairy Commission) | .. | 1 | .. | 1 |
| Butter (Dairy Commission) | 1 | .. | .. | 1 |
| Oleomargarine | 1 | .. | .. | 1 |
| Milk (Board of Health) | 1 | 1 | 5 | 7 |
| Butter (Board of Health) | 1 | .. | .. | 1 |
| Miscellaneous | .. | .. | .. | 13 |
| Water | .. | .. | .. | 67 |
| TOTAL | 12 | 13 | 5 | 110 |

Eighty-eight samples were reported to the Secretary of the State Board of Health during the months of November and December. Of this number seven were samples of milk, one of butter, sixty-seven were of water and thirteen of a miscellaneous character.

Of the seven samples of milk, the analysis of five, received from Boulder, were unofficial as no inspector's cards were received. The other two were suspected of containing preservatives, but none were found although one was below the standard in fat.

The sixty-seven samples of water were collected as follows:

| | |
|---|---|
| Armstead | 2 |
| Baker | 6 |
| Bannock | 3 |
| Billings | 9 |
| Butte | 3 |

| | |
|---|---|
| Choteau | 4 |
| Circle | 2 |
| Columbus | 1 |
| Conrad | 1 |
| Forsyth | 2 |
| Great Falls | 8 |
| Hamilton | 3 |
| Harlowton | 4 |
| Helmville | 1 |
| Livingston | 12 |
| Plains | 1 |
| Ronan | 1 |
| Stevensville | 2 |
| Whitefish | 2 |
| Total | 67 |

Of the miscellaneous samples two were of a worm powder, one a blight remedy, one a disinfectant, one a bottled spring water, four soft drinks, two candy and two were ice cream fillers.

A more detailed report of the food samples follows:

| Lab. No. | Date. | Description. | Remarks. |
|---|---|---|---|
| 2321 | 11- 3-13 | Corona Lithia Water, Northwestern Bottling Works, Butte, Mont...... | Passed. |
| *27 | 11-24-13 | Blight Remedy, submitted by R. A. Cooley, Bozeman, Montana........ | Analyzed for informational purposes. |
| *28 | 11-24-13 | Disinfectant, sent in by Louis Wessel, Great Falls, Montana.......... | Analyzed for informational purposes. |
| *30 | 11-24-13 | Worm Powder, sent in by Ranchman's Supply Company, Terry.... | Same as Sample No. 2550. |
| 2550 | 11-24-13 | Worm powder sold by Ranchman's Supply Company, Terry, Montana.. | Analyzed for informational purposes. |
| 2621 | 11- 4-13 | Milk, Boulder, Montana ............. | Analysis unofficial. |
| 2622 | 11- 4-13 | Milk, Boulder, Montana ............. | Analysis unofficial. |
| 2623 | 11- 4-13 | Milk, Boulder, Montana ............ | Analysis unofficial. |
| 2624 | 11- 4-13 | Milk, Boulder, Montana ............ | Analysis unofficial. |
| 2625 | 11- 4-13 | Milk, Boulder, Montana ............. | Analysis unofficial. |
| 2665 | 11-24-13 | Milk, Billings, Mont., suspected of containing a preservative .......... | Low in fat. |
| 2668 | 11-24-13 | Milk, Billings, Mont., suspected of containing a preservative .......... | Passed. |
| 2546 | 12-22-13 | Butter, Dealer, Halverson & Co., Cut Bank, Mfr. Will Cross, Cut Bank.. | Complies with the standard. |
| 2551 | 12-11-13 | Candy, Dealer and Mfgr. Geo. Dimos, Livingston, Montana .............. | Passed. |
| 2552 | 12-11-13 | Candy, Dealer and Mfgr. Geo. Dimos, Livingston, Montana .............. | Passed. |
| 2319 | 12-22-13 | Pure Sparkling Champagne Cider, Northwestern Bottling Works, Butte Montana .......................... | Not Champagne Cider. |
| 2330 | 12-22-13 | Champagne Cider, Holland Rink Bottling Works, Butte, Montana...... | Not Champagne Cider. |
| 2345 | 12-22-13 | Champagne Cider, Brown & Flanigan, Butte, Montana .............. | Not Champagne Cider. |
| *31 | 12-31-13 | Non-Alcoholic Poma made from the Cream of the Apple, Mfgr. Evergreen Fruit Product Co., Spokane, Wash. Sent in by W. M. Milligan, Miles City .................... | Passed. |
| 2347 | 12-31-13 | Cream Puff for Ice Cream Filler, send in by Emmet Carey, Phillipsburg, Mont. Sold by Sweet Candy Company, Salt Lake, Utah........ | Not passed. |
| 2348 | 12-31-13 | Velvet Special, Ice Cream Filler, sent in by Emmett Carey, Phillipsburg, Montana. Sold by J. G. Cheartz, St. Paul, Minn. .................... | Not passed. |

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*Unofficial number.

## ICE CREAM FILLERS.

Some samples of fillers for ice cream have been analyzed and found to contain vegetable gums. The Minimum Standards of Food Products of the State Board of Health defines ice cream as follows:

"Ice cream is a frozen product made from cream, gelatine and sugar with or without flavoring, and contains not less than fourteen per cent of milk fat and not more than eight-tenths per cent pure gelatine.

Fruit ice cream is a frozen product made from cream, sugar and sound clean mature fruits, and contains not less than twelve per cent of milk fat.

Nut ice cream is a frozen product made from cream, sugar and sound, non-rancid nuts and contains not less than twelve per cent of milk fat."

From the above definations it is apparent that the use of gums as thickners in ice cream is not permitted and that a product made with such a filler would be adulterated under the Montana Food and Drug Act.

## VINEGAR.

Section 33, Minimum Standards of Food Products of the State Board of Health made pursuant to the Montana Food and Drug Act defines the various types of vinegar as follows:

"**Vinegar, Cider Vinegar, Apple Vinegar,** is the product made by the alcoholic and subsequent acetous fermenations of the juices of apples, is laevo-rotory and contains not less than four (4) grams of acetic acid, not less than one and six-tenths (1.6) grams of apple solids, of which not more than fifty (50) per cent are reducing sugars, and not less than twenty-five hundredths (0.25) grams of apple ash in one hundred (100) cubic centimetres at twenty (20) degrees Centigrade; and the water soluble ash from one hundred (100) cubic centimetres at twenty (20) degrees Centigrade of the vinegar contains not less than ten (10) milligrams of phosphoric acid (pp. 205) and requires not less than thirty (30) cubic centimetres of decinormal acid to neutralize its alkalinity.

**Wine Vinegar, Grape Vinegar,** is the product made by the alcoholic and subsequent acetous fermentations of the juices of grapes and contains in one hundred (100) cubic centimetres at twenty (20) degrees Centegrade not less than four (4) grams of acetic acid, not less than one (1.0) gram of grape solids and not less than thirteen hundredths (.13) grams of grape ash.

**Malt Vinegar** is the product made by the alcoholic and subsequent acetous fermentations, without distillations and of an infusion of barley malt or cereals whose starch has been converted by malt, is dextro-rotoary, and contains, in one hundred (100) cubic centimetres at twenty (20) degrees Centigrade, not less than four (4) grams of acetic acid, and not less than two (2) grams of solids, and not less than two-tenths (0.2) gram of ash; and the water soluble ash from one hundred (100) cubic centimetres at twenty (20) degrees Centigrade of the vinegar contains not less than nine (9) milligrams of phosphoric acid, (P 205), and requires not less than four (4) cubic centimetres of decinormal acid to neutralize its alkalinity.

**Sugar Vinegar** is the product made by the alcoholic and subsequent acetous fermentations of solutions of sugar, syrup, glucose, is dextro-rotatory, and contains in one hundred (100) cubic centimetres at twenty (20) degrees Centigrade, not less than four (4) grams of acetic acid.

**Glucose Vinegar** is the product made by the alcoholic and subsequent fermentations of solutions of starch sugar or glucose, is devtro-rotatory, and contains in one hundred (100) cubic centimetres at twenty (20) degrees Centigrade, not less than four (4) grams of acetic acid.

**Spirit Vinegar, Distilled Vinegar, Grain Vinegar,** is the product made by the acetous fermentation of dilute distilled alcohol, and contains in one hundred (100) cubic centimetres at twenty (20) degrees Centegrade; not less than four (4) grams of acetic acid.'

**Meaning of the Term Vinegar.** Various types of vinegar originate from several different sources by processes of fermentation. The term "vinegar," when used without a qualifying word, has come to mean the product derived from apple juice by the alcoholic and subsequent acetous fermentation and is so defined by the Board of Health. It is synonymous as a trade term with cider vinegar or apple vinegar. When any other type of vinegar is offered for sale a qualifying term as "Malt Vinegar," etc., must be used.

**"Second Pressings."** The number of pressings used in preparing the juice is immaterial so long as the pomace is fresh and not decomposed. The practice of allowing the pomace from the presses to stand in piles or in vats for a number of days, during which time it becomes heated and decomposed, and then pressing, securing what is ordinarily called "second pressing," which produces a product consisting in whole or in part of a filthy and decomposed material and is therefore adulterated.

**Vinegar From Dried-Apple Products.** The product made from dried-apple skins, cores and chops, by the process of soaking, with subsequent alcoholic and acetous fermentations of the solution thus obtained, is not entitled to be called vinegar without further designation, but must be plainly marked to show the material from which it is produced. The dried stock from which this product is prepared must be clean and made from sound material.

**Addition of Water.** When natural vinegars made from cider, wine or the juice of other fruits are diluted with water, the label must plainly indicate this fact; as, for example. "diluted to ——— per cent acid strength." When water is added to pomace in the process of manufacture, the fact that the product is diluted must be plainly shown on the label in a similar manner. Dilution of vinegar naturally reduces, not only the acid strength, but the amount of other ingredients in proportion to the dilution, so that reduced vinegars will not comply with the analytical contents for undiluted products; but the relations existing between these various ingredients will remain the same. Diluted vinegars must have an acid strength of at least four (4) grams of acetic acid per 100 cubic centimetres.

**Mixtures of Vinegars.** As different kinds of vinegar differ in source, flavor and chemical composition, mixtures therefor are compounds within the meaning of the Food and Drug Act, and if they contain no added poisons or other added deleterious ingredients, are not misbranded if plainly labeled with the word "compound," together with the names and proportions of the various ingredients.

**Addition of Boiled Cider and Coloring Matter.** The Food and Drug Act provides that a product shall be deemed to be adulterated if it be mixed, colored, powdered, coated, or strained in a manner whereby damage or inferiority is concealed. The addition of coloring matters, boiled cider, etc., to vinegar, wine vinegar and the other types of vinegar, or mixtures thereof, is for the purpose of concealing damage or inferiority or producing an imitation product. In the first instance, the use of such products is an adulteration and therefore prohibited. Products artificially colored or flavored with harmless ingredients in imitation of some particular kind of vinegar are not misbranded if plainly labeled "Imitation Vinegar" in accordance with the provisions of the law.

**Mixtures of Distilled and Sugar Vinegar.** The product prepared by submitting to acetous fermentation a mixture of dilute alcohol (obtained, for example, from molasses by alcoholic fermentation and subsequent distillation) and dilute molasses, which has undergone alcoholic fermentation, is not "molasses vinegar," but a compound of distilled vinegar and molasses vinegar; such mixtures, however, must contain a substantial amount of molasses vinegar and not a small amount for the purpose of coloring the distilled vinegar. The molasses used must be fit for food purposes and free from any added deleterious substances.

**Acetic Acid Diluted.** The product made by distilling acetic acid is not vinegar and when intended for food purposes must be free from harmful impurities and sold under its own name.

**Products Obtained by Distilling Wood.** The impure product made by the destructive distillation of wood, known as "pyroligneous acid," is not vinegar nor suitable for food purposes.

**Acid Strength.** All of the products described above should contain not less than four (4) grams of acetic acid per one hundred (100) cubic centemeters.

According to the provisions of the Food and Drug Act the dealer who retails a product assumes the responsibility of its conformity with the standards of the State of Montana unless he has a proper guarantee from the manufacturer who then assumes that responsibility.

## TESTING WATER FOR TYPHOID GERMS.

A large proportion of the water samples received at the laboratory are accompanied by a request that tests for typhoid germs be made. It has been made clear in previous bulletins that it is not customary in routine water testing to attempt to determine whether a water is infected with typhoid or other germs. Laboratory methods for determining infection in water have not been developed to the extent that they are available for routine tests.

The water analyst, therefore, uses chemical and bateriological methods designed to detect contamination and does not attempt to isolate specific germs. A contaminated water contains excreta from human beings or animals and, therefore, such a water is considered unsafe for domestic use because it may be infected. The germs that cause water borne diseases no doubt have their origin in the intestinal tract of human beings and animals.

This explains why an interpretation of a water analysis does not contain information concerning specific germs. The interpretation can only contain statements concerning the probable presence of contamination in the water.